



BZ-A-00087

20102

2/9

3. We believe that, as the final treatability study report for the OU 2 IM/IRA, this document should present a section on the overall success of the treatment within the context for which the IM/IRA was originally intended. The reason for this treatability study is that this IM/IRA made an effort to implement and study an effective water treatment for radionuclides, metals, and volatile compounds that was different from, but complimentary to, the OU 1 water treatment facility. From this, two-fold results were expected. Not only would these treatment technologies be evaluated for Rocky Flats Plant applications, but further surface water degradation would be mitigated. The success of this project is that both of these results have been attained. Though the treatments were effective in removing the contaminants, they were not cost effective at the levels of contamination present at some of the OU 2 sites; however, what contamination was present was effectively treated. This is good, and valuable, information that should be emphasized.

4. The Division concurs that some change to the current collection and treatment configuration is probably justified. During finalization of this treatability study, we recommend staff-level meetings where changes can be discussed and evaluated, and where an appropriate mechanism and schedule for the changes can be determined.

If you have any questions regarding these matters, please call Joe Schieffelin of my staff at 692-3356.

Sincerely,



Gary W. Baughman, Chief
Facilities Section
Hazardous Waste Control Program

cc: Martin Hestmark, EPA
Scott Grace, DOE
Annette Primrose, EG&G
Jackie Berardini, CDH-OE
Susan Nachtrieb, City of Westminster
Todd Margulies, Colorado Council on Rocky Flats

COLORADO
COUNCIL
ON ROCKY
FLATS



August 25, 1993

Operable Unit No. 2: Field Treatability Study Phase II

1. General Comment on Executive Summary It is refreshing to see that based upon regulations, exorbitant operating costs, and good common sense that a re-evaluation of the IM/IRA was recommended.
2. General comment. This report should be double-sided.
3. Section 1, Page 1, Introduction: Is it really necessary to repeat this entire paragraph word for word from the executive summary?
4. Section 1.1, Page 3, Figure 1-2. It is not evident from this figure which area is OU-2. The OU-2 area should be delineated more clearly.
5. Section 1.3, Paragraph 1: The third sentence, "During Phase I, surface water collected from SW-59 and SW-61." Something has been omitted.
6. Section 1.3.1, Paragraph 2. Where are the calculations to determine the 120 day GAC changeout intervals?
7. Section 1.4, Similar to Comment 3, this section is almost an identical repeat of the Executive Summary. Is it needed in both places?
8. Section 2, Paragraph 1. It is stated as-built drawings are available. Where?
9. Section 2.1 1, Paragraph 3. Is high density polyethylene (HDPE) used for transfer piping, an inert material? (ie. No analytes of concern being leached from pipe) Same question regarding the equalization tank.
10. Section 2 1 2, Paragraph 8: How was a 12 hour settling time arrived at?

Ginger Swartz, Executive Director

Representative Samuel Williams Chairman

Colorado Council on Rocky Flats, 1536 Cole Boulevard Suite 325, Golden, Colorado 80401 (303)232 1966, Fax (303)232 1448

4/9

- 11 Section 3 1, Paragraph 2 It is a good practice to state that statistical variability exists when using multiple labs. What or how much statistical variability? How useful is the data from the two programs if they can not be directly compared with each other?
12. Section 3.3.1. This section on Data Quality Objectives (DQOs) is quite vague and general. DQOs should be specific to the data end-users.
- 13 Section 3.3 2. It is stated that all QA/QC guidelines are followed except the field QC procedures. What are the field QC procedures and why were they not followed?
- 14 Section 3 4.3, Paragraph 2. States that approximately 50 percent of available analytical results presented in this report have been validated.
 - A Section 3 3.1 states that EPA Level IV analysis (CLP or higher) with 100 percent validation is required. Since only about 50 percent of the analytical results have been validated, how does this apparent conflict affect results and discussion in this report. Also, please justify using the data without 100 percent validation.
 - B It is stated that results that appear questionable have been re-examined either statistically or in relation to other parameters to test usability. What statistics were used? What "other parameters" were used?
- 15 Section 3 4 4 titled "Statistical Analysis of Data" really doesn't mention or discuss any statistical procedures or analysis. "The risk assessment will be based on a more comprehensive list of potential contaminants." More comprehensive than what? Only ARARs and TBCs leaves a lot out.
- 16 Section 4.1, Paragraph 1. What exceptions were data not collected in accordance with the QA/QC documents specified in Section 3 3.2?
- 17 Section 4.1, Paragraph 3. Number 7, sample holding times met is extremely important. Why is this not a primary criterion?
18. Section 4.1, Paragraphs 4-6. These three paragraphs lead the reader to seriously question the data used in this report. The use of non-validated data for statistical computations and assessments combined with no collection of field QC samples gives reason for serious concern as to the validity of the overall results. Please justify not rejecting the entire data set.
19. Section 4 2.1, Paragraph 1: States that the total flow at each station, date, duration, and volume of surface water collected at each source were not obtained. Why?

20. Section 4.2.1, Paragraph 2 Is the assumption that average annual flows at each source cited from IRAP (DOE, 1991) a sound one? (ie 1993 much wetter than 1991)
21. Tables 4-3 and 4-4. Please explain how for Americium-241 a minimum +/- error value can be a negative number Why are there no maximum +/- error values given for some analyses in both tables (plus Table 4-5)'
22. Section 4.2.3.1, Paragraph 4. States that an Uniform Replacement Method was used to calculate summary statistics (ie. mean concentration). What was the justification for selecting and implementing this method versus the "Winsorization" or "Maximum Likelihood Estimators" (MLE) replacement methods? Please illustrate that the Uniform Replacement method is as statistically sound as the other two methods
23. Section 4.2.3.2, Paragraph 3 Strike the word "and" after however in the first sentence. It is not possible from Table 4-4 to get the information in the second sentence (ie. "9 samples exhibited concentrations...which is above (add "the") ARAR). Where does this information come from? Same applies to the rest of this paragraph. Please explain or rewrite stating information more clearly
24. Section 4.2.3.3, Paragraph 3. States that "none of the VOCs were detected above the method detection limits in any of the 30 samples collected " Table 4-5 shows that only 29 samples were collected for 1,1-Dichloroethene
25. Section 4.2.3.3, Paragraph 4 States that "the mean value of 40.7 ug/l exceeds the ARAR for dissolved manganese " Table 4-5 shows the ARAR for dissolved manganese to be 50 ug/l. How can this statement be true?
26. Section 4.2.3.3, Paragraph 5 States that "lead and mercury were detected in concentrations exceeding their respective ARARs approximately 17% of the time." It is not clear whether this is 17% of the number of samples or 17% of the number of detects. Please clarify
27. Section 4.3.1, Paragraph 5 How do the parameters which can not be determined affect subsequent design, results, and discussion?
28. Section 4.3.2.3, Paragraph 2 States that "Available characterization data presented in Appendix H is incomplete at this time " Why?
29. Tables 4-8, 4-9, 4-10 Please explain the negative numbers in all three tables in the Radiochemistry category

6/9

- 30 Section 4 4 1, Paragraph 1 Why were the data collected at each station not always correlated in time?
- 31 Section 4 5, Paragraph 2 States that the costs listed in Table 4-15 are "estimates" Were records not kept so that accurate cost numbers could be produced.
32. Section 4.5.1: Where are the calculations used to produce the input data in Table 4-16?
- 33 Section 4 6, Paragraph 6 Without QA/QC sampling how can it be determined whether or not there has been any laboratory contamination? The fact that field QC samples have been implemented after the data has been collected is not acceptable, unless the risk assessment is to be used as a screening tool only'
34. Appendix B.2.3.3 and Table B-1. The approach of using fraction contributed doesn't really make sense. Some of these could not be considered as drinking water sources based on these flow rates, and to combine them in different proportions is even more confusing and unrealistic

Comments on the OU 2 Field Treatability Study Phase II

Ken Korkla, Rocky Flats Cleanup Commission
August 4, 1993

Section 4.0 Page 19/36: In section 4.3.2 the statement is made that the RRS processed approximately 12.7 million gallons of surface flow in phase II. Table 4-6 lists cumulative totals for both phase I and phase II as being 12.7 million gallons. If the RRS only operated during phase II, then the amount of water processed should only be 12.7 - 7.308 million gallons, since phase II did not begin until May 5, 1992.

Section 4.0 Page 22/36: The text mentions that the GAC units are being stored as low-level mixed waste. Is it possible to recharge these units?

Section 4.0 Page 22/36: Why were the data collection efforts not correlated in time for the different collection points? The implications of this decision are apparent in Table 4-11 on page 26 where an interpretation of the results shows that the GAC units add contaminants, especially radionuclides and metals. Is this a proper interpretation of the footnote, "mean effluent concentrations exceed mean influent concentrations?"

Environmental Science & Engineering Division
Colorado School of Mines
Golden, CO 80401-1887
303/273-3427
FAX 303/273-3413

COLORADO SCHOOL OF MINES
GOLDEN, COLORADO 80401-1887

August 9, 1993

Melanie K. Zgabay
Community Relations
EG&G Rocky Flats, Inc.
Rocky Flats Plant
P O. Box 464
Golden, CO 80401

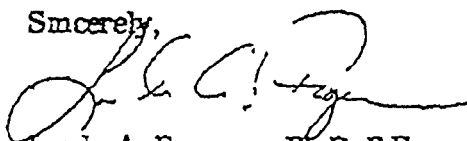
Dear Melanie,

I have reviewed the Field Treatability Study for the South Walnut Creek Basin. I feel at a disadvantage because I don't know what processes were evaluated in the Phase I Treatability Study. I find it difficult to comment on specific details because I don't believe the treatment process tested for metals removal was appropriate. I am surprised that a chemical precipitation system, with about 200 ppm of chemicals added, was used to remove less than 1 ppm total metals and radionuclides. A reasonable estimate of sludge production per unit volume of water could have been made without this field treatability study and indicated the cost would be exorbitant. Low concentration of pollutants seem most cost effectively removed by sorption process, like the VOC's. Heavy metals and radionuclides can be removed from dilute aqueous streams without alkaline metal interference by biosorbents. The sorption system would have fewer associated unit processes and the loss of VOC's noted in the precipitation scheme could be mitigated.

I also don't agree with the conclusion that the SW61 and SW132 should not be treated because it's based on evaluation of an inappropriate metals removal technology and the poor design if the VOC's are lost before the GAC column is reached in the process.

Please feel free to call me at 273-3491 for clarification's or questions.

Sincerely,



Linda A. Figueroa, Ph.D, P.E.
Assistant Professor

